

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-003566**Date Inspected:** 20-Jul-2008**Project Name:** SAS Superstructure**OSM Arrival Time:** 2300**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 800**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China**CWI Name:** Wang Zhenhua**CWI Present:** Yes No**Inspected CWI report:** Yes No N/A**Rod Oven in Use:** Yes No N/A**Electrode to specification:** Yes No N/A**Weld Procedures Followed:** Yes No N/A**Qualified Welders:** Yes No N/A**Verified Joint Fit-up:** Yes No N/A**Approved Drawings:** Yes No N/A**Approved WPS:** Yes No N/A**Delayed / Cancelled:** Yes No N/A**Bridge No:** 34-0006**Component:** OBG Assembly**Summary of Items Observed:**

Caltrans Quality Assurance (QA) Inspector Robert Vatcher, arrived on site at the Zhenhua Port Machinery Company (ZPMC) facility at Changxing Island, in Shanghai, China, for the purpose of monitoring welding and fabrication of the San Francisco / Oakland Bay Bridge (SFOBB) components. The QA Inspector observed the following: The weather today is 27C and clear.

**Orthotropic Box Girder (OBG) Fabrication**

QA arrived at OBG Bay 1 at 0000 hrs. for the purpose of witnessing Production Monitoring Tests (PMT) in accordance with WPS B T 2342 U1 (Urib) -3 combination GMAW/ SAW on closed rib deck plates. Gantry number 1 will be utilized for these tests conducted on this date. As well these PMT's will be directly associated with Deck Plates DP 279-001. Tacking was performed prior to QA arrival. Magnetic particle (MT) was performed by Xu Hai and observed by QA. Several linear indications were discovered and removed prior to subsequent welding. QA did observe that both sections equaling to a total of four welds had intimate contact between the closed rib plates and the associated base plate material.

Measured parameters were as follows;

GMAW

AMPS VOLTS Travel Speed

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- |    |     |      |            |
|----|-----|------|------------|
| 1. | 395 | 30.0 | 528 mm     |
| 2. | 390 | 30.2 | Per Minute |
| 3. | 370 | 30.0 | Constant   |
| 4. | 375 | 31.0 |            |
| 5. | N/A |      |            |
| 6. | N/A |      |            |

Grinding of the root passes commenced at this time. Upon grinding QA performed a visual examination of all the root passes. QA also observed ZPMC QC Chen Xi and ABF QC Wang Zhenhua personnel perform the same.

### SAW

- |    | AMPS | VOLTS | Travel Speed |
|----|------|-------|--------------|
| 1. | 685  | 25.0  | 515 mm       |
| 2. | 690  | 25.0  | Per Minute   |
| 3. | 680  | 25.2  | Constant     |
| 4. | 685  | 25.0  |              |
| 5. | N/A  |       |              |
| 6. | N/A  |       |              |

Visual (VT)- QA observed ZPMC QC Chen Xi and ABF QC Wang Zhenhua ZPMC perform a visual examination (VT) on DP 279-001 represented specimen. As well QA performed a visual exam of all four welds. QA concurred with QC assessment that all four joints appeared to conform to the contract documents.

Ultrasonic Testing (UT) - commences & observed by QA. ZPMC UT personnel Xu Hai performed UT for depth of penetration. Xu Hai accepted all four welded joints.

QA observes QC representative ZPMC QC Chen Xi & ABF QC Wang Zhenhua conduct measurements of the macro etched specimens.

279-1-1 279-3-2

279-1-2 279-3-3

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279-1-3 279-4-4

279-2-4 279-4-5

279-2-5 279-3-1

All were accepted by ZPMC QC Chen Xi & ABF QC Wang Zhenhua. QA conducted a random measurement of all the specimens utilizing a loupe with a straight edge line and (10) 1.0 mm increments, concurring with the QC assessment and concluded that all the specimens had a depth of penetration greater than 10.0 mm.

The above mentioned as observed by QA appear to be in conformance with the contract documents.

### Summary of Conversations:

No relevant conversations this date.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Ady Velasco 138-1694-2685, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Vatcher,Robert	Quality Assurance Inspector
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<b>Reviewed By:</b>	Cuellar,Robert	QA Reviewer
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